Arkema Chemical Facility Potential Release - EPA Response Strategy

Situation: The Arkema facility in Crosby, TX stores chemicals that are currently at risk of release or explosion due to the facility's inability to maintain refrigeration on several chemical containers, with one container critically affected by flood waters. Initial modeling by the National Atmospheric Release Advisory Center recommended a 1.5-mile evacuation zone. The evacuation was implemented, including facility personnel.

Facility Information: The facility is currently storing approximately 1.3 million lbs of organic peroxides, 47,000 lbs of sulfur dioxide (SO_2), among others. The facility is both a Tier II facility and RMP facility.

Hazard Assessment (Possible critical scenarios):

Explosion: In the presence of an ignition source the peroxides could ignite, resulting in an explosion. The potential exists for an ignition source being present from diesel generators still operating at the facility. A site and condition specific model by the Interagency Modeling and Atmospheric Center (IMAAC) indicates that 38,000 lbs of peroxide (volume within one container) could impact an area within a 0.3-mile radius. A chain reaction explosion could increase the radius to 0.5 miles

Meltdown: The damaged container which is storing peroxide is in danger of becoming compromised. The peroxide will release into the flood waters and surrounding environment. This will cause the rapid release of concentrated hydrogen peroxide and organic by-products. This hydrogen peroxide can react with the organic waste materials in the flooded areas. This poses a threat of fire and release of VOCs.

Secondary Consequence of Concern: Based on the model by IMAAC, in the event of a release of the SO_2 at 1600 hrs. on 30 Aug, the exposure presents a possibility of injury within an approximate area of 2.7 mi long and 0.5 mi wide in the SE direction from the facility, and an area of concern within 4.6 mi long and 2.5 mi wide in the same direction.

Recommended EPA Response Strategy

The chemicals which could be released in the scenarios pose threats to both public health and the environment. EPA will coordinate all actions with local emergency officials, TCEQ, Texas Emergency Management officials, and the facility.

1. If feasible, EPA ASPECT plane will perform overflight to determine if any areas are still in danger of reaction.
2. Assuming access is possible, perform air monitoring beginning at a 1.5-mile radius of the facility to determine a safe work area. Air monitoring strategy will be based on the chemical classes stored at the facility to determine a safe working area.
3. In consultation with local and facility representatives, determine a safe approach to the facility to assess the damage and if mitigation can be safely performed.
4. Perform air monitoring for all sensitive populations within 3 miles of the facility.
5. Perform sampling as needed once hazard assessment is complete.